Abstract

Background

Although pulmonary endarterectomy is the treatment of choice for chronic thromboembolic pulmonary hypertension, not all patients are eligible. While balloon pulmonary angioplasty is an alternative for such patients, its efficacy and safety may differ between patients with and without surgically accessible lesions.

Methods

This study involved 344 patients treated with balloon pulmonary angioplasty who were ineligible for pulmonary endarterectomy. Based on the angiographical lesion location, patients were divided into the surgically accessible (Group 1) and inaccessible (Group 2) groups, and percent changes in hemodynamics and clinical parameters before and after balloon pulmonary angioplasty were investigated. We also conducted survival analyses using Kaplan–Meier analysis.

Results

While no differences in baseline characteristics were identified between the groups, balloon pulmonary angioplasty significantly improved hemodynamics in both groups, without any difference regarding the incidence of complications. Meanwhile, the percent changes in the mean pulmonary arterial pressure, pulmonary vascular resistance, 6-min walk distance, right ventricular area index on echocardiography, and the achievement rate of World Health Organization functional class I after balloon pulmonary angioplasty were significantly lower in Group 1 than in Group 2. The cumulative survival rates at 1, 5, and 10 years after balloon pulmonary angioplasty were not significantly different between the two groups (Group 1: 92.5%, 86.1%, 84.3%; and Group 2: 96.5%, 92.9%, 90.1%, respectively).

Conclusions

The outcome of balloon pulmonary angioplasty in inoperable patients with surgically accessible proximal lesions was acceptable; however, further investigations are necessary to clarify the optimal treatment for such patients.